# DIVISION 1 GENERAL REQUIREMENTS

#### FIELD SURVEY REFERENCING PROCEDURES

#### PART 1 GENERAL

#### 1.01 WORK INCLUDED

- A. Obtain a "Salt Lake County Surveyor's Office Monument Permit" from the office of the Salt Lake County Surveyor. At the time the Permit is issued, the Salt Lake County Surveyor will collect a fee (currently \$100.00) to deposit into the Salt Lake County Surveyor's Public Land Corner Fund, for each existing Public Survey Monument liable to damage.
- B. Follow the procedure outlined in the Permit.
- C. Obtain permit and provide traffic control as required.

#### 1.02 RELATED WORK AND REFERENCES

A. Follow the procedure outlined by the Salt Lake County Surveyor's Office Monument Permit. All work must comply with the requirements of the Permit.

# 1.03 QUALITY ASSURANCE

A. All monument replacement work must be performed under the direct supervision of a Professional Land Surveyor, duly licensed by the State of Utah.

#### 1.04 SUBMITTALS

A. A Professional Land Surveyor will be responsible for filing a record of the replaced monuments with the Salt Lake County Surveyor pursuant to the requirements of the Utah Land Survey Monument Record Update law, Utah Code B Title 17, Chapter 23, Section 17, Subsection 6.

#### PROJECT COORDINATION

#### PART 1 GENERAL

#### 1.01 DESCRIPTION

- A. Coordinate work of employees and subcontractors.
- B. Coordinate work with that of the utilities, other contractors, property owners, tenants, and work done by the City.
- C. Comply with orders and instructions of the Engineer.

# 1.02 <u>RELATED WORK AND REFERENCES</u>

- A. General Conditions of the Construction Agreement
- B. General Conditions of the Development Agreement
- Section 01575 Detour Construction and Facilities
- D. Section 01705 Contract Closeout Procedures

#### PART 2 EXECUTION

#### 2.01 COORDINATION WITH THE CITY ENGINEER

- Cooperate with ENGINEER, inspectors, and separate contractors to establish on-site lines of authority for communications.
- B. Develop procedures for handling submittals, reports, records, recommendations, coordination drawings, and schedules.
- C. Coordinate with the Engineer to insure that the agency responsible for operation and maintenance of the completed facility (e.g. Parks Dept., Transportation Divisions, Streets Division, Flood Control, Public Utilities Department, Public Works Department, etc.) is advised before project or parts thereof are open for use.
- D. Maintain and operate the work until the work is accepted by the City and turned over to the agency responsible for operation and maintenance.
- E. Coordinate with Engineer to review project site within 7 days after the notice to proceed to determine conflicts with existing improvements. Contractor shall then notify each resident in writing who will be impacted by the work within 7 days after the walk through.
- F. Notify in writing of problems that develop during construction.

# 2.02 COORDINATION OF SERVICES

- A. Facilitate the progress of the work and cooperate with the Engineer, his inspectors, and other contractors. Establish on-site lines of authority for communication. Develop procedures for handling submittals, reports, records, recommendations, coordination drawings, and schedules with the Engineer. Respond to directives given by the Engineer. Bring any problems that develop during construction to the immediate attention of the Engineer. Coordinate with all affected City departments.
- B. Designate in writing and have an agent on the job at all times who is an experienced Superintendent capable of reading and thoroughly understanding the plans and specifications. The Superintendent shall have full authority to execute the orders or directions of the Engineer without delay and to promptly supply such materials, equipment, tools, labor, and incidentals as may be required. Such supervision shall be furnished irrespective of the amount of work sublet. He shall keep the Engineer informed as to his work schedule, including prior notice before starting each phase of the contract.

#### 2.03 COORDINATION WITH UTILITIES

- A. Notify all utilities affected by the proposed construction, coordinate required adjustments, and have all necessary adjustments of the utilities and other appurtenances within or adjacent to the limits of construction made as soon as practicable.
- B. Prior to any excavation notify "Blue Stakes" for utility locations. All utilities and all other utility appurtenances within the limits of the proposed construction which are to be relocated or adjusted are to be moved by the utility at utility's expense when in the right-of-way, unless otherwise provided for in the special provisions, an existing franchise agreement, or as noted on the plans.
- C. Consider in bid all of the permanent and temporary utility appurtenances in their present or relocated positions, as shown on the plans. No additional compensation will be allowed for any delays, inconvenience, or damage sustained due to any interferences from the said utility appurtenances or the operation of moving them, except as specifically outlined in the General Conditions of the Construction and Development Agreements.
- Coordinate with local garbage collection and postal services to allow access during construction.
- E. In general, the contract will indicate various utility items, certain of which are to be relocated or adjusted by the Contractor.

# 2.04 INTERUPTION OF UTILITIES

- A. Notify fire and police services in local jurisdiction if emergency is safety related or if construction activities interrupt any utility service.
- B. Contact the affected utility company. Find out how soon repairs can be made as well as when the repairs will begin.
- C. Contact the affected local residences or businesses. Inform when repairs will begin and how long it will take to complete them.
- D. Inform ENGINEER and OWNER.

#### 2.05 COORDINATING WITH SEPARATE CONTRACTORS

- A. Coordinate with separate contractors at no additional cost to OWNER to leave Work complete and finished.
- B. Inspect and promptly report any apparent discrepancies of defects in work done by separate contractors that render Work unsuitable for proper execution and results. Failure to inspect and report shall constitute acceptance of separate contractor's work as fit and proper to receive work of this contract, except as to defects that may develop in the other separate contractor's work after the execution of the CONTRACTOR'S work.

#### 2.06 COORDINATION WITH RESIDENTS AND BUSINESSES

Provide all residents and businesses affected by the construction a written notice 48 hours prior to beginning work. The notice shall include:

- Contractor and Subcontractor Name
- Type of Work
- Superintendent Name and Phone Number
- 4. Twenty-four (24) hour Emergency Number
- 5. Dates and type of Service Interruption
- City Project Name
- Tree trimming requirements: 12' above top back of curb 48 hours to trim or Contractor will provide tree trimming.

8. Remove parked vehicles from roadway.

#### CONSTRUCTION SURVEYING AND FIELD ENGINEERING

#### PART 1 GENERAL

#### 1.01 WORK INCLUDED

- A. Provide and pay for construction surveying and field engineering services required for project such as:
  - 1. Survey work required in execution of project.
  - 2. Civil, structural or other professional engineering services specified, or required to execute Contractor's construction methods.
  - 3. Identifying existing control points and property line corner stakes as indicated on the drawings, as required.
  - 4. Insure that all construction is accomplished in accordance with the details, lines, grades, and elevations provided in the drawings.
- B. Obtain permit and provide traffic control as required.

## 1.02 RELATED WORK AND REFERENCES

- A. Section 01035 Field Survey Referencing Procedures
- B. Section 01720 Project Record Documents

# 1.03 QUALIFICATIONS OF SURVEYOR OR ENGINEER

A. Secure all services from a Registered Professional Engineer or Registered Land Surveyor only. The City accepts engineers or surveyors registered in the discipline required for the specific service on the project and licensed in Utah.

#### PART 2 EXECUTION

# 2.01 SURVEY REFERENCE POINTS

- A. Existing basic horizontal and vertical control points for the project are those designated on drawings.
- B. Locate and protect control points prior to starting site work, and preserve all permanent reference points during construction.
  - 1. Make no changes or relocations without prior written notice from Engineer.
  - 2. Report to Engineer when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
  - 3. Require surveyor to replace project control points which may be lost or destroyed. Establish replacements based on original survey control.

#### 2.02 PROJECT SURVEY REQUIREMENTS

A. The Contractor shall protect all survey monuments located in the vicinity of the contract work. If the monuments are disturbed or destroyed, they will be reset by the proper authorities and the expense of such efforts shall be charged to the Contractor.

- B. The City reserves the right to check and verify all staking.
- C. If the survey monument is to be disturbed by construction, the Salt Lake County Surveyor will be notified. The Salt Lake County Surveyor will record the monument and reset it after construction at contractor's expense.

#### CONTRACTOR SUBMITTALS

# PART 1 GENERAL

#### 1.01 SUBMITTAL PRODUCTS INCLUDE

Α. Shop drawings Ι. Material test results Schedules B. L. Documents C. Site Conditions Survey **Programs** K. D. **Plans** Manuals L. E. Reports M. Data F. QA/QC Plan Samples N. G. Other items as directed by Engineer

Lists Ο.

Н. Testing agencies/labs

Submittals shall be submitted with a Transmittal sheet that will include the following information as a minimum:

- 1. Proiect
- 2. Unique submittal number
- 3. Name or description of submittal item
- 4.

#### 1.02 RESPONSIBILITY

- A. Submittals may be prepared by the contractor, subcontractors, or suppliers, but the contractor shall be responsible for all submittals, to include timeliness, accuracy and completeness.
- B. It is preferred that Submittals be submitted electronically by email to the Engineer. Paper copies will be accepted if electronic submission is not available, in which case the Engineer will require two copies of each submittal.
- C. All submittals shall be submitted to the Engineer. The Engineer will ensure the timely review of the submittals, taking no more than seven days to respond to the contractor electronically or in writing. Response will consist of:
  - 1. **APPROVED**
  - 2. REJECTED (typically with comments)
  - 3. REVISE AND RESUBMIT (typically with comments)

#### 1.03 PRECONSTRUCTION CONFERENCE SUBMITTALS

Submit the following items at the preconstruction conference (Section 01335) for review.

- 1. Schedule for completion/submission of Shop Drawings, Samples, proposed Substitutions, acquisition of permits, and other items as directed by the Engineer.
- Preliminary construction schedule. 2.
- 3. List of Subcontractors, Suppliers and Testing Agencies/Labs.
- 4. Name of Safety Officer.
- 5. Mobilization site location and layout.

# 1.04 SITE CONDITIONS SURVEY

Submit the Site Conditions Survey (Section 01320) prior to mobilization.

# 1.05 PROGRESS REPORTS

Submit a Progress Report to the Engineer with each Application for Payment. The report shall include:

- 1. Construction schedule update
- 2. Submittal schedule update if needed
- 3. Changes in personnel, subcontractors, suppliers, etc.
- 4. Other items as directed by the Engineer

#### 1.06 SHOP DRAWINGS

- A. When required by the contract documents or Engineer, furnish to the Engineer as per paragraph 1.02B above. Shop Drawings refer to any required calculations, designs, fabrications, installation drawings, lists, graphs, data sheets, etc. All Shop Drawings shall be signed, dated and sealed and submitted with a Transmittal sheet.
- B. The minimum sheet size shall be 8.5 inches by 11 inches. The maximum sheet size shall be 24 inches by 36 inches.
- C. Submit only pertinent data sheets for products. Mark specific item on pages as necessary and reference to specification section. Include performance characteristics, diagrams, controls, components, parts, finishing's, etc. as required.

#### **CONSTRUCTION SCHEDULE**

#### PART 1 GENERAL

#### 1.01 WORK INCLUDED

A. Production of a Progress Schedule.

Schedule will contain:

- a. Critical activities such as excavation, fill, paving, etc.
- b. Subcontractor activities
- c. Supplier activities
- d. Schedule critical path
- e. Look ahead schedule as required.
- B. Schedule will be updated monthly, with each application for payment, or as required by contract. If contractor is behind schedule the Engineer may request an update weekly or as needed.
- C. Contractor may choose the schedule type unless otherwise directed in the contract.

#### 1.02 QUALIFICATIONS

The contractor shall demonstrate an acceptable level of competence with the selected system by submitting a complete preliminary construction schedule at the Preconstruction Conference (see Section 01335). If an acceptable level of competence is not demonstrated, the Engineer may direct the contractor to employ a competent Scheduler with the requisite skills.

# 1.03 BAR CHART SCHEDULE (Gantt)

A Bar Chart Schedule, commonly known as a Gantt Chart, is acceptable in most cases unless otherwise directed, to plan and record the construction of the project. It must include the activities of Subcontractors and Suppliers as noted above, and:

- A. Show the complete sequence of construction activities along vertical axis and time in the horizontal axis. Time divisions shall be in days with start dates for all activities.
- B. Milestones, activity links, non-working days and percent activity completion shall be noted.
- C. When using an "S" Curve Analysis, plot contract time vs. percent (%) of contract completed.

# 1.04 <u>CRITICAL PATH SCHEDULE (CPM)</u>

A Critical Path Schedule, commonly known as the Critical Path Method (CPM), is acceptable in most cases unless otherwise directed, to plan and record the construction of the project. It must include the activities of Subcontractors and Suppliers as noted above, and:

- A. Shall use Activity-on-Arrow format.
- B. Shall use a baseline that identifies:
  - a. Early start times, late finish times and float/slack time for each activity.
  - b. Shall identify critical activities and show critical path for project.

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C. Shall be reviewed by the Engineer to identify problems/concerns.

Note: Program Evaluation and Review Technique (PERT) is not acceptable. PERT is probabilistic, depending on activity duration estimates with time as controlling factor. The deterministic quality of CPM, which relies on historical data for activity durations, results in cost as controlling factor.

#### SITE CONDITIONS SURVEY

# PART 1 GENERAL

#### 1.01 REQUIREMENTS

- A. The contractor shall conduct a thorough pre and post construction survey of the entire project site. The survey shall consist of photographs, video recordings and maps (topographic and otherwise) as necessary. Sufficient products shall be generated to allow for the resolution of claims.
- B. The survey shall include but is not limited to, access roads, driveways, walks, buildings, and utilities. Elevations of these structures pre and post construction shall be taken as well. Post surveys shall also include all completed work.

#### 1.02 SUBMITTALS

- A. All survey information shall be submitted digitally by DVD in a format acceptable to the Engineer. Disk shall include photography, maps, etc. as well as any other written documentation/notes. Maps shall be in AutoCAD 2013 or later.
- B. All maps shall be submitted in hard/paper copy (two copies). Two copies of all disks shall be submitted.

#### PRECONSTRUCTION CONFERENCE

# PART 1 GENERAL

# 1.01 PRECONSTRUCTION CONFERENCE

- A. Prior to any work on site a Preconstruction Conference will be conducted. The conference will be held at a time and place agreed upon by the contractor and Engineer. Attendees should include, but are not limited to, the following:
  - 1. Engineer
  - 2. City Inspectors from Public Works, Public Utilities, etc. as required
  - 3. Owner representative
  - 4. Contractor
  - 5. Contractor Superintendent
  - 6. Subcontractors as needed
  - 7. Suppliers as needed
- B. The Engineer will chair the conference.
- C. The purpose of the preconstruction conference is to ensure key personnel understand their roles, responsibilities, lines of communications. An agenda will be distributed by the Engineer in advance. It will include as a minimum:
  - 1. Project administration
  - 2. Safety
  - 3. Work plan and schedule
  - Subcontractors and Suppliers
  - 5. Inspection and testing requirements
  - 6. Survey and staking
  - 7. Storm Water Pollution Prevention Plan
- D. The Contractor will provide/present the following submittals as per Section 01300.
  - 1. Schedule for completion/submission of Shop Drawings, Samples, proposed Substitutions, acquisition of permits, and other items as directed by the Engineer.
  - 2. Preliminary construction schedule.
  - 3. List of Subcontractors and Suppliers.
  - 4. Name of Safety Officer.
  - 5. Mobilization site location and layout.

#### MOBILIZATION AND DEMOBILIZATION

# PART 1 GENERAL

#### 1.01 REQUIREMENT

- A. Mobilization: Contractor shall mobilize as directed by contract and Engineer. Mobilization includes bringing all required equipment, materials and labor for the project to the site and establishing temporary power, buildings and necessary facilities.
- B. Demobilization: Contractor shall demobilize as necessary at the completion of the project.
   Partial demobilization may take place as necessary near the completion of the project.
   Demobilization includes the removal of equipment, materials and debris. It shall culminate with a clean restored site as directed.

#### PART 2 EXECUTION

# 2.01 SUBMITTALS

The following submittals shall be approved prior to mobilization.

- 1. Quality Assurance/Quality Control Plan (if required)
- 2. Submittal schedule
- Construction schedule
- 4. Storm Water Pollution Prevention Plan (SWPPP)
- 5. All required permits including but not limited to: Temporary Use Permit, Excavation Permit, Temporary Noise Permit, UDOT Encroachment Permit, etc.

#### 2.02 TEMPORARY FACILITIES

- A. Field Office: Contractor's option.
- B. Utilities: Provide power, water, sanitary facilities and any other utilities as required.
- C. Security: Install temporary fencing as directed/necessary to protect materials, tools, equipment, adjoining property owners and public.
- D. Support: Construct as necessary internal traffic control, waste disposal, drainage system, signage, parking surfaces, etc.

# 2.03 REMOVALS

- A. Remove all temporary materials, structures and equipment when no longer required or no later than the completion of the project.
- B. Clean and restore any damage caused by the temporary facilities.
- C. Clean and restore site as specified at the conclusion of demobilization.

#### WATERING

#### PART 1 GENERAL

## 1.01 WORK INCLUDED

- A. Furnish all labor, equipment and water required for the project, such as dust control, revegetation, cleaning, compaction, constructing subgrade, etc.
- B. Control runoff of water to ensure no damage occurs.

#### 1.02 RELATED WORK AND REFERENCES

- A. Section 02240 Backfill, Compaction, and Embankment
- B. Development Code Title 15-19-6

#### 1.03 SUBMITTAL

- A. Obtain approval from Engineer for the source of water to be used.
- B. The Contractor shall provide all necessary water at his own expense, unless otherwise provided in the Special Conditions.
- C. If the Contractor purchases water from Sandy City at a fire hydrant on or near the project, all arrangements shall be made by him at his own expense, with payment made on the actual quantity of water metered. The Director of Public Utilities must authorize the opening of any City hydrants. All water usage will be metered. Application for service shall be made to the Public Utilities office located at Sandy City Hall. The Engineer shall also be notified by the Contractor of such permission as soon as granted.
- D. The Contractor shall coordinate with Sandy City Public Utilities Department for use of hydrants and shall comply in strict accordance with its requirements for hydrant use.
- E. The Contractor shall use <u>hydrant wrenches only</u> to open hydrants. He shall also make certain that the hydrant valve is open "full", since partially opening the valve may cause damage to the valve. An approved auxiliary valve shall be provided on the outlet line for control purposes. Fire hydrant valves must be closed slowly and completely to avoid a surge on the system, which creates undue pressure on the water lines. **The Contractor shall carefully note the importance of following these directions**.
- F. If one of the Contractor's employees shall knowingly or unknowingly damage any hydrant, valve system, or any other water work facilities, the Contractor will be responsible for all resulting costs and damages. He shall immediately notify the water utility so that the damage can be repaired by the water agency as guickly as possible.
- G. Violation of these requirements will result in fines and will make the Contractor liable for damage suits because of malfunctioning of damaged fire hydrants in the event of fire or flood.

#### 1.04 PRODUCT DELIVERY AND HANDLING

- A. Where hauled water is required, the tank truck and/or trailer shall meet all safety and licensing regulations and shall be provided with a pump of such size and capacity as to provide for a discharge equivalent to that required for hydrant settling water. Adjustable spray heads, front or rear, and spray bar shall provide uniform and controlled application of water without ponding or washing.
- B. An approved pressure pipeline hose nozzle or sprinkling system may be used for applying water in embankment construction or to moisten material before excavation. Do not apply water so that erosion is created.
- C. The Contractor shall provide sufficient equipment to apply water as directed. Insufficient or inadequate watering equipment shall be cause for closing down those operations affected by such until the Contractor makes proper remedy of the deficiency.

# PART 2 PRODUCTS

# 2.01 <u>WATER</u>

- A. Provide water with adequate water quality to complete the work.
- B. Provide water at no cost to the City.
- C. Provide adequate water to meet construction needs.

#### 2.02 WATER TRUCK

A. Provide water truck with adequate distribution system for spreading the water at the rate required by the plans to perform the work. Control of application must be at the driver's seat.

#### 2.03 PIPELINE

A. Provide adequate length and size of pipeline including the necessary sprinkler heads to apply the quantity of water required by the plans or as approved by the Engineer.

#### 2.04 HOSE

A. Provide adequate length of hose with sufficient strength to deliver the amounts of water required by the plans or as approved by the Engineer.

#### PART 3 EXECUTION

#### 3.01 APPLICATION

- A. Apply water at rate and time necessary to complete the project tasks, including holidays and weekends as needed.
- B. Control runoff of excess water so it does not leave the project boundary.
- C. Engineer may require additional water as necessary to control dust issues.

#### **DETOUR CONSTRUCTION AND FACILITIES**

#### PART 1 GENERAL

#### 1.01 WORK INCLUDED

- A. Detouring pedestrian and vehicular traffic includes but is not necessarily limited to:
  - 1. Regulating pedestrian and vehicular traffic in and around the work zone.
  - 2. Maintaining the right of access of the public to private property unless a closure is contemplated.
  - 3. Notifying Emergency Response Agencies and public of intended closures of access to private properties.
  - 4. Maintaining existing services.
  - 5. Regulatory and/or work zone traffic signage is required if a project creates a traffic impact.

# 1.02 RELATED WORK AND REFERENCES

A. Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD)

#### 1.03 ACCESS RIGHTS OF PUBLIC

- A. Consider the access rights of the public at all times. Cause <u>no</u> unnecessary inconvenience.
- B. Provide and maintain safe and adequate pedestrian and vehicular access to fire hydrants, commercial and industrial establishments, churches, schools, parking lots, service stations, motels, fire and police stations, hospitals and establishments of similar nature. Access to these facilities shall be continuous and unobstructed.
- C. Maintain vehicular access to residential driveways to the property line except when necessary construction precludes such access for reasonable periods of time. Home owners will be notified when construction will require drive approaches to be closed. If backfill has been completed to such extent that safe access may be provided and the street is opened to local traffic, immediately clear the street and driveways and provide and maintain access. Provide temporary drive approaches at all times except when concrete is being placed or cured.
- D. Non-compliance with the details of Section 1.02 will result in the issuance of a stop work order with no additional compensation for delays in work.
- E. The Contractor shall direct all construction activities so as to minimize obstruction of vehicular or pedestrian traffic and to prevent damage to completed work. In this regard, the Contractor shall keep the proper City Authorities and Emergency Response Agencies continuously informed as to the location(s) of these operations. No City street or road shall be closed to vehicular traffic without the prior permission of the City and not until after the affected emergency response authorities have been notified.
  - 1. In order that the effect to both the flow of traffic and damage to the new work is

minimized, the Contractor shall at all times provide approved barricades, lights, flag men and other traffic control devices approved by the City Transportation Engineer, specified on the drawings or specifications or as may be required by law. All barricades needed overnight shall have flashing amber lights.

 The Contractor shall submit his traffic control plan conforming to MUTCD to the City Transportation Engineer for approval 48 hours prior to the start of work. All necessary personnel and\or devices, including any additional requirements as directed by the Engineer, shall be provided solely at the expense of the Contractor.

# 1.04 MAINTAINING EXISTING SURFACES

- A. Coordinate with the various parties involved in the delivery of mail and the collection and removal of trash and garbage to maintain existing schedules for these services.
- B. Ensure that no interruption occurs in mail delivery, trash and garbage collection. This shall include the Contractor's responsibility to pick up regularly scheduled garbage collection and haul to nearest point of suitable access as determined by the agency.
- C. Facilitate the garbage or trash pickup in the following manner:
  - 1. If operations interfere with garbage or trash pickup operations, notify all affected residents and businesses ahead of time by written notice. Inform them in the notice not to put out their garbage or trash for pickup at the appointed time and tell them another time will be set up to collect their garbage or trash. It will be collected when unrestricted vehicular access is assured for all the affected area residents and businesses. Deliver a copy of the notice to the Engineer for approval before it is delivered to the affected citizens.
  - Contact local Sanitation Division when there will be restricted access for garbage or trash pickup. Sanitation Division will inform the Contractor when an alternate pickup can be scheduled.

# 1.05 NOTICE OF CLOSURE

- A. At least 48 hours in advance of approved closure or partial closure or of re-opening any street, alley, or other public thorough-fare, notify Emergency Services Corporations, Police, Fire, Transportation and Engineering Departments. Notify also the Utah Transit Authority, school districts, postal services and garbage collection agency.
- B. Notify in writing all abutting property owners at least two (2) days prior to excavation in front of said abutting properties. Deliver a copy of the Notice to the Engineer for approval before it is delivered to the affected citizens.
- C. In open streets, no intersection, driveway, or parking entrance shall be blocked more than one (1) working day. No intersection shall remain closed to vehicular traffic overnight.

#### PART 2 PRODUCTS

## 2.01 TEMPORARY TRAFFIC CONTROL DEVICES

A. In accordance with MUTCD or as approved by Sandy City Transportation Engineer.

# 2.02 PEDESTRIAN WALKWAYS AND CONSTRUCTION FENCES

A. In accordance with MUTCD or as approved by Sandy City Transportation Engineer.

#### 2.03 PAVEMENT MARKINGS

A. Pavement marking equipment and materials shall conform to the Manual on Uniform Traffic Control Devices. Markings include reflectorized paint lines or reflectorized pavement marking tape.

## PART 3 EXECUTION

#### 3.01 GENERAL TRAFFIC REGULATIONS

A. Unless provided for otherwise in this section regulate all pedestrian and vehicular traffic in and adjacent to the work site in accordance with the MUTCD and approved Traffic Control Plan or as approved by the Sandy City Transportation Engineer.

#### 3.02 TRENCH EXCAVATIONS

A. If at any time trench excavations are over 4 feet deep and within 8 feet from a sidewalk or intersection, provide barricades and caution tape in such a manner that the entire perimeter of excavation is roped off. The rope shall be at least 3 feet but not more than 4 feet high with flags tied at 4 foot intervals and visible to pedestrians to warn them of danger. Any excavation left open overnight will also be roped and protected with flasher-type barricades and covered with timbers and plywood.

#### 3.03 PEDESTRIAN ZONES

A. Maintain safe and adequate all-weather pedestrian zones and public transportation stops, as well as all-weather pedestrian crossings of the work at intervals not exceeding one block length or as designated by the Engineer.

#### 3.04 DETOUR SIGNS FOR CLOSED INTERSECTIONS

A. Be responsible for providing pedestrian detour signs at all closed intersections when directed by Engineer.

#### 3.05 CONSTRUCTION OPERATIONS

- A. Perform grading operations, roadway excavation and fill construction in a manner to provide a reasonably satisfactory surface for traffic. When rough grading is completed, bring the roadbed surface to a smooth, even condition satisfactory for traffic.
- B. Unless otherwise authorized, perform work in only one-half the roadway at one time. Keep clean and unobstructed one-half of roadway including sidewalks until the opposite side is ready for use. If one-half of a street only is being improved, the other half shall be conditioned and maintained as a detour.
- C. Post a flag person at each end of the construction site under the following conditions:
  - 1. When equipment is intermittently blocking or crossing a traffic lane.
  - 2. Where only one traffic lane is available for two directions.
  - 3. At multiple lane signalized intersections when traffic is restricted to one through lane traffic in any one direction.

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4. When directed by Engineer.

# 3.06 BARRICADES

- A. Furnish, place and maintain all safety devices, caution and warning signs, barricades, etc., required for all pedestrian and traffic control in accordance with the requirements specified.
- B. Do not remove barricades until all permanent traffic control signs and pavement markings are installed.

# 3.07 PAVEMENT MARKINGS

A. Remove temporary pavement markings at the completion of the work.

#### STORAGE AND PROTECTION

#### PART 1 GENERAL

#### 1.01 WORK INCLUDED

A. Provide secure storage and protection for products to be incorporated into the work, and maintenance and protection for products after installation until completion and acceptance of the work.

#### 1.02 RELATED WORK AND REFERENCES

A. The respective section of Specifications: Special Requirements for Specific Products.

#### PART 2 EXECUTION

#### 2.01 STORAGE

- A. Store products immediately on delivery, and protect until installed in the work.
  - 1. Store in accordance with manufacturer's instructions, with seals and labels intact and legible.
- B. Store products subject to damage by elements in substantial weather tight enclosures.
  - 1. Maintain temperatures within ranges required by manufacturer's instructions.
  - Provide humidity control for sensitive products, as required by manufacturer's instructions.
  - 3. Store unpacked products on shelves, in bins or in neat piles, accessible for inspection.

# C. Exterior Storage:

- 1. Provide substantial platforms, blocking or skids to support fabricated products above ground. Prevent soiling or staining.
  - a. Cover products subject to discoloration or deterioration from exposure to the elements with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
- 2. Store loose granular materials on solid surfaces such as paved areas, or provide plywood or sheet materials to prevent mixing with foreign matter.
  - a. Provide surface drainage to prevent flow or ponding of rainwater.
  - b. Prevent mixing of refuse or chemically injurious materials or liquids.
- D. Arrange storage in manner to provide easy access for inspection.
- E. Materials or equipment stored in public right-of-way longer than five (5) working days during temporary shut-down is prohibited. Contractor will pay Sandy City for removal of

materials and equipment if Engineer orders removal by Sandy City crews to protect public safety.

# 2.02 MAINTENANCE OF STORAGE

- A. Maintain a periodic system of inspection of stored products on a scheduled basis to assure that:
  - 1. State of storage facilities is adequate to provide required conditions.
  - 2. Required environmental conditions are maintained on continuing basis.
  - 3. Surfaces of products exposed to elements are not adversely affected.
- B. Any weathering of products is not acceptable under requirements of Contract Documents.
- C. Maintain all roadways, sidewalks, curbs, gutters, driveways, approaches and any other public access clear of materials and equipment. Do not block hydrants, mailboxes, water meters or any other public utilities.

## 2.03 PROTECTION OF TREES, LAWNS AND LANDSCAPING

- A. Prohibit the following on or around planted trees, lawns and landscaped areas.
  - 1. Traffic of any kind.
  - 2. New construction of any kind including but not limited to utilities, concrete, asphalt, or brick within 18 (eighteen) inches or 10 (ten) inches for every 1 (one) inch of diameter of the tree trunk measured 4 ½ (four and one half) feet above the ground, whichever is greater, unless otherwise approved by the Parks Superintendent or Urban Forester. If it is necessary to install underground utilities within the barrier area then they must be installed by boring or tunneling methods.
  - 3. Change the grade around a tree as to shut off air, light or water from the roots.
  - 4. Pile building material, equipment or other substance on or near a tree, lawn or landscaping.
  - 5. Pouring or spraying any injurious matter on or around a tree, lawn or landscaping.
  - 6. Post any signs, fastening any guy wire, cable or rope to a tree.
  - 7. Damage to branches of a tree outside of the designated barrier.
- B. Any person doing construction, excavation or demolition work in the vicinity of a tree shall protect the tree from injury or damage with a substantial barrier.
  - 1. The barrier shall be a minimum of 4 (four) feet high.
  - 2. The barrier shall have minimum radius of the greater of the following:
    - a. Two foot radius.
    - b. A distance in feet equal to the diameter of the tree trunk in inches measured four and one-half feet above the ground.
  - 3. All building materials, extra soil or other debris shall be kept outside of the barrier.
  - 4. If construction needs to take place within the designated radius, the barrier may be

relocated while active construction is taking place and then reinstalled as soon as active construction is complete, unless otherwise approved by the Parks Superintendent or Urban Forester.

- C. Any pruning is to be performed by or under the direct supervision of an ISA (International Society of Arboriculture) Certified Arborist. This shall include repairing of all damage incidental or otherwise. Note: Damage to or destruction of trees is considered a Class C Misdemeanor.
- D. Violation of the following shall result in replacement of the trees, lawns and/or landscaping. If an identical tree and/or shrub in size and species cannot be reasonably obtained, then the contractor shall replace the tree with one that is acceptable to the Urban Forester. The contractor shall also pay the appraisal value of the tree to the City less the cost of the tree installed. The appraised value of the tree shall be based on the condition of the tree before construction was started and shall be determined in accordance with the latest edition of the "Guide for Plant Appraisal" as published by the International Society of Arboriculture.

## 2.04 STORAGE ON SIDEWALK, CURB AND GUTTER

- A. Maintain sidewalk, curb and gutter clean and clear of debris, dirt, or excavated materials at all times.
- B. Do not remove, block, or otherwise render unusable sidewalks by either the storage of construction equipment or materials or the construction procedures used, unless a safe, usable, alternate walkway is provided along the same side of the street. The walkway shall be at least four (4) feet wide and as sound and smooth as the normal sidewalk.
- C. At City's discretion, remove or pay all City costs for removing mud, dirt, debris, deposited by the Contractor within the streets of Sandy City Corporation.

#### 2.05 RESPONSIBILITY OF CONTRACTOR

It is the responsibility of Contractors executing contracts with Sandy City to provide the following information:

- 1. Hazardous chemicals to which City employees are or may be exposed,
- 2. Material Safety Data Sheets (MSDS) for all hazardous chemicals used,
- 3. Safety rules to be followed around hazardous chemicals.
- 4. Measures City employees must take to lessen the possibility of exposure, and
- 5. Steps the Contractor has taken to lessen the risks.

#### CONTRACT CLOSEOUT PROCEDURES

#### PART 1 GENERAL

#### 1.01 REQUIREMENTS INCLUDED

A. Administrative provisions for substantial completion, project acceptance for maintenance, final inspection and final acceptance.

# 1.02 RELATED WORK AND REFERENCES

- A. Section 01720 Project Record Documents
- B. Conditions of the Contract
- C. Fiscal provisions, legal submittals and additional administrative requirements.
- Punch list, liquidated damages, as described in various sections of the Contract Documents.
- E. Standard Details and working drawings.

#### 1.03 SUBMITTALS

A. Submit all project record documents showing "as constructed" details.

# PART 2 EXECUTION - NEW DEVELOPMENT

#### 2.01 90% BOND RELEASE

- A. When all work covered under the terms of the Agreement is complete, the developer shall submit written certification to the Engineer that:
  - 1. All work is complete and ready for inspection.
  - Work has been inspected and completed for compliance with contract documents.
  - 3. There are no materials or workman liens' associated with the work (see Waiver of Lien/Final Release form, page 8).
  - 4. Equipment and systems have been tested in the presence of the Engineer and operate satisfactorily.
  - 5. That all project material inspection testing reports have been submitted.
- B. The Engineering Division will initiate a bond release form, attach a plat map, and distribute a copy to each of the respective inspectors or departments. Each inspector will check the subdivision and\or Commercial Development for his particular area of responsibility.
  - Engineering Division will notify the Developer in writing, listing the incomplete or defective work.

- Developer shall within 30 days remedy the stated deficiencies, and send a second written certification to the Public Works Department that all work is complete.
- 3. Engineering Division will re-inspect the work.
- 4. The punch list will not be considered definitive because of long lag times between inspection and correction. Addenda to this punch list may be made anytime between the issuance of the first punch list and final acceptance of corrections. These addenda will be considered an integral part of this approval process. Therefore, developers are encouraged to proceed with repairs as rapidly as possible.
- 5. When all work has been completed by the Developer and accepted by the City, a 90% bond release will be issued and the City will accept the improvements for maintenance.
- C. Ten percent of the original bond total will be retained by the City for at least one year from the date of acceptance for maintenance. This is to guarantee against material and workmanship defects.
- D. It is the Developer's responsibility at the conclusion of the one (1) year warranty period to request a final release in writing in accordance with the items in 2.01.A.

#### 2.02 FINAL ACCEPTANCE (100% BOND RELEASE)

- A. After one year the developer must request for the final 10% bond release in writing. The procedure for inspection and release as outlined in 2.01.A above will be followed for this release.
  - 1. The one year period may be extended if in the opinion of the Engineer there are conditions which warrant such action. Notice of such extension and the reasons for it will be furnished to the developer. This extension will normally not exceed one year. However, there are exceptional cases such as deviation from specifications where either replacement or a longer period of observation is required. These circumstances will be dealt with on an individual basis.
- B. Copies of all correspondence will be maintained in the Engineering Division files.

#### 2.03 GENERAL DEVELOPMENT GUIDELINES

- A. The following paragraphs identify only the items of major concern for new development within the City. Some of the items below may not apply, however, Contractor or Developer is responsible for any item applicable to the work and for the punch list items prepared by the Engineer.
  - 1. Grading, demolition or construction in proposed subdivision and\or commercial development before the development receives final approval is prohibited, unless a site grading plan has been approved by the Engineer, all permits have been drawn, and all fees have been paid. Any such work is subject to restoration of natural contours, re-vegetation, removal, replacement, relocation, uncovering for inspection or any other remedial measures necessary to bring it into conformance with the plat, plan and profiles and flood control design as finally approved by the City Council, Engineering, Public Utilities, and Planning Departments as appropriate.

- All inspections must be done prior to or concurrent with construction. This
  requires 48 HOUR NOTICE TO THE APPROPRIATE DEPARTMENT BEFORE
  CONSTRUCTION BEGINS. Failure to make this notification will result in the
  uncovering and\or removal of all construction done without notification at the
  discretion of the Engineer.
- 3. All work shall be done in strict conformance with the applicable Sandy City Specifications.
- 4. Numerous inspections will be required during the course of construction to fit the normal construction sequence and the developer's scheduling. The City will work with the contractors as closely as possible provided that the required advanced notice is received.
- 5. Damaged work must be removed and replaced. Standards and tolerances for work are outlined within Sandy City Specifications.
- 6. Obtain a drainage permit from the state for parcels over one (1) acre.

#### B. General:

- 1. Deficiencies will be marked in the field and/or on the punch list prepared by the Engineer.
- C. Survey Control: Complete the following items.
  - Installation of monuments and rivets.
  - 2. Installation of witness marks for lot lines (rivets) installed at top back of curb (TBC).
- D. Flood Control: Complete the following items.
  - 1. Verify line and grade of pipelines in conformance with Section 02433.
  - 2. Verify line and grade of curb, gutter, waterway, and swales in accordance with the plans.
  - Verify catch basin frames and grates are depressed as specified on the Standard Details.
  - 4. Connections of pipelines to structures have proper radius transitions.
  - 5. "Storm Drain" inscriptions are on the manhole covers.
  - 6. Line and grade of curb, gutter and sidewalk are in accordance with Section 03050. Ponding in curb and gutter is less than 1/4 " deep and not greater than (6) inches in diameter.
  - 7. Pipes are bedded and backfilled in conformance with Section 02240. Irrigation ditches, piping, fences and any other appurtenances are installed as detailed by the contract documents or as directed by Sandy City.
  - 8. Grates within public right-of-ways are to be bicycle safe.
- E. Water Lines: Complete the following items.

- 1. Lines are chlorinated and flushed; main valves, laterals, yokes, boxes, hydrants and meters are properly set as detailed in sections 02224, 02669, and 02675 of the Sandy City Standard Specifications.
- 2. Bedding and backfill of lines are in conformance with Sandy City Standard Specifications section 02240 Backfill, Compaction, and Embankment.
- F. Private Utilities: Complete the following items.
  - 1. All conduits traversing under pavement surfaces for future facilities have been placed and marked in the field.
  - 2. Backfill trenches in conformance with Sandy City Specifications.
- G. Sidewalks and Driveway Approaches:
  - 1. Sidewalk is installed as detailed in the contract documents and Section 03050 Standard Details.
  - 2. Access ramps are placed at all street corners and in conformance with the Sandy City Standard Details.
  - 3. Driveway approaches comply with Sandy City Standard Details.

# H. Roadway Construction:

- 1. Compact subgrades and embankments and grade to tolerances specified.
- 2. Install sub-base materials as directed by Engineer upon subgrade acceptance.
- 3. Finish paving materials and compact as outlined in specifications.
- 4. Install retaining walls, sound barrier walls, fences or other appurtenance or structures as required by the contract documents.
- 5. It is expected that construction will proceed in an orderly and logical manner to avoid subsequent construction from damaging existing work. Of particular importance is asphalt. Road base and asphalt will be allowed only after: subgrade preparations have been inspected and accepted by the Engineer, all utilities are in service, manholes and valve covers are to grade, and curb is acceptable.
- 6. Raise all structures to grade in compliance with Section 02438.

#### I. Landscaping:

- 1. Conform to Division 7 within and Chapter 07 of the Landscape Standards of the Sandy City Development Code.
- 2. Install all landscaping and irrigation as required by the contract documents.

# PART 3 EXECUTION - Capital Projects

# 3.01 SUBSTANTIAL COMPLETION

A. When work is substantially complete contractor shall submit written certification to the Engineer that:

- 1. Work is substantially complete (see Contractor's Certification of Substantial Completion form, page 7).
- Work has been inspected and completed for compliance with contract documents.
- 3. There is no material or workman liens' associated with the work (see Waiver of Lien/Final Release form, page 8).
- 4. Equipment and systems have been tested in the presence of the Engineer and are in operation.
- 5. Work is completed and ready for inspection.
- 6. All project material inspection and testing reports have been submitted.
- B. Engineer will conduct a walk-through of the improvements with Contractor within 7 days after receipt of such certification such that a project punch list can be developed.
  - Contractor will be issued a written punch list, identifying the incomplete or defective work.
  - 2. Contractor shall remedy the stated deficiencies within 30 calendar days, unless exemptions of specific items are granted by the Engineer in writing, and send a second written certification to the Engineer that the work is complete.
  - 3. The punch list will not be considered definitive because of potential long lag times between inspection and correction. Addenda to this punch list may be made anytime between the issuance of the first punch list and final acceptance of corrections. These addenda will be considered an integral part of this approval process. Thus, contractors are encouraged to proceed with repairs as rapidly as possible.
  - 4. Liquidated damages shall be collected by the City to cover the City's inspection and administrative costs for Contractor's failure to complete all punch list items within the thirty (30) day time limit. Engineer shall base costs on the estimated hours required to inspect and administer remaining construction work.
  - 5. The City reserves the right to retain all amounts previously withheld or due the Contractor, including liquidated damages, until all punch list items are complete.
  - 6. Upon contractor's request, the Engineer will re-inspect the work. Once all work is in compliance with the contract documents, and proof has been submitted that the performance bond has been extended to cover the one year warranty period and a lien waver for materials and workmanship acceptable to Sandy City is provided by the Contractor (see page 8), a project acceptance for maintenance letter will be issued.
- C. Warranty Period Contractor will extend 100% of the original performance bond for a period of one year from the date the City accepts the project for maintenance and shall submit a copy to the Engineer. This is to guarantee the City against material and workmanship defects. The Contractor is also required to carry insurance as specified in the construction agreement for the duration of the warranty period.
- E. Contractor will submit the Project Record Documents as per section 01720 to the Engineer.

# 3.02 FINAL ACCEPTANCE

- A. One year from the date of acceptance of the project for maintenance the Engineer will reinspect the work. The procedure for inspection and release as outlined in 3.01.A and 3.01.B above will be followed.
  - 1. The one year period may be extended if in the opinion of the Engineer there are conditions which warrant such action. Notice of such extension and the reasons for it will be furnished to the contractor. This extension will normally not exceed one year. However, there are exceptional cases such as deviation from specifications where either replacement or a longer period of observation is required. These circumstances will be dealt with on an individual basis.
  - 2. When all work has been satisfactorily completed and accepted by Sandy City, the City will issue a letter of final project acceptance and all bonds and insurance will be allowed to expire.
- B. Copies of all correspondence will be maintained by the Engineer.

# CONTRACTOR'S CERTIFICATION OF SUBSTANTIAL COMPLETION

|                     |  | DATE<br>PROJECT NUMBER  |                            |
|---------------------|--|---|----------------------------|
|                     |  | PROJECT TITLE   |                            |
| TO:                 | Sandy City Corporation   |   |                            |
|                     |  |   |                            |
|                     |  |   |                            |
| ATTEN               | TION:  |   |                            |
| PORTIC              | ON OF WORK SUBSTANTIALLY COMPLETE  | :   |                            |
| In accor            | rdance with Section 01705 of the these specific  | cations, this   |                            |
| letter ce<br>am an  | ertifies that I,   |   |                            |
| authoriz            | zed official of  |   |                            |
| working             | g in capacity of   |   |                            |
| and hav             | ve been properly authorized by said firm or cor  | poration to   |                            |
| sign the            | e following statements pertaining to the subject   | project.  |                            |
| perform<br>the conf | I know of my personal knowledge, that there a ced project, and do hereby certify, that the worned, and materials used and installed in every particular drawings and specifications, and in accordal construction. | k of the project described above hat particular, in accordance with, and it | s been<br>n conformity to, |
|                     | With the exception of the following minor item all parts and requirements, and ready for your  |   | tially complete in         |
|                     |  |   |                            |
|                     | I understand that neither the determination by acceptance thereof by the Owner, shall opera terms of the guarantee provisions of the Cont  | ite as a bar to claim against the Cor                                       |                            |
| DISTRI              | BUTION: 12   | BY  |                            |
|                     | 3<br>4.  | FIRM:   |                            |

# WAIVER OF LIEN FULL AND FINAL RELEASE

| FROM: ("Contractor/Developer")  (name of person or firm giving release) |   | PROJECT:   |    |
|---|---|--|----|
|   |   | (Project Name)   |    |
| (street address)  |   | (Project street address)   |    |
| (City,  | State, Zip Code)  | (City, State, Zip Code)  |    |
| TO:   | Sandy City<br>8775 South 700 West<br>Sandy, Utah 84070  |  |    |
| mater<br>stop r<br>labor,   | ng below, hereby acknowledges parials supplied to the above-describ<br>notices, equitable liens, and labor  | m (herein called the <b>("Contractor/ Developer")</b> , by the person ayment in full for all labor, subcontract work, equipment, and ed Project, and hereby waives and releases all mechanics liens and material bond rights on the Project for all materials, supplied, or furnished by or for the Contractor and used on the Project in .                                  | s, |
| to and  |   | (date)   |    |
| Contrany a prope  | ct from every person or entity furn<br>actor/Developer also agrees to in-<br>nd all claims or liability whatsoeve<br>rly, timely, and/or fully pay all labo | er agrees to furnish a good and sufficient waiver of lien on the ishing labor or materials for the Contractor/Developer. The demnify, defend, and hold harmless Sandy City from and agains r that may arise as a result of the Contractor/Developer's failure prers, suppliers, subcontractors, or other parties performing worl at the request of the Contractor/Developer. | to |
| Contr   |   | by represent and warrant that I am fully authorized by the to represent and bind it by my signature below.   |    |
|   |   | CONTRACTOR/DEVELOPER   |    |
|   |   | BY:  |    |
|   |   | DATE:  |    |
| WITN  | ESS:  |  |    |
| Addre   | 9SS:  | _  |    |

#### PROJECT RECORD DOCUMENTS

# PART 1 GENERAL

## 1.01 WORK INCLUDED

A. This section describes the Contractor's responsibility for maintaining and marking project record documents.

## 1.02 RELATED WORK AND REFERENCES

A. Section 01705 - Contract Closeout Procedures.

#### 1.03 DEFINITIONS

A. Record Documents: Those documents maintained and annotated by the Contractor during construction projects for the purpose of recording the "as built" condition of Work.

# PART 2 EXECUTION

## 2.01 MAINTENANCE OF DOCUMENTS

A. Maintain at job site, one copy of:

| 1. | Contract Drawings               | 8.  | Inspection Certificates   |
|----|---------------------------------|-----|---------------------------|
| 2. | Specifications                  | 9.  | Manufacturer Certificates |
| 3. | Addenda                         | 10. | Survey Documents          |
| 4. | Reviewed Shop Drawings          | 11. | SWPPP                     |
| 5. | Change Orders                   | 12. | All related permits       |
| 6  | Other Modifications to Contract |     |                           |

- 7. Field Test Records
- B. Store project record documents in a location, apart from documents used for construction.
- C. Provide files and racks for storage of project record documents.
- D. Maintain project record documents in clean, dry, legible condition.
- E. Do not use record documents for construction purposes.
- F. Make documents available at all times for inspection by Engineer.

# 2.02 MARKING DEVICES

A. Use red colored pencil for all marking.

# 2.03 RECORDING

- A. Label each document "PROJECT RECORD" in 2 inch high printed letters.
- B. Keep record documents current.

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- C. Do not permanently conceal any work until required information has been recorded.
- D. Contract Drawings: Legibly mark to record actual construction:
  - 1. Depths of various elements of foundation.
  - 2. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
  - Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
  - 4. Field changes of dimension and detail.
  - 5. Changes made by Change Order.
  - 6. Details not on original Contract Drawings.
- E. Specifications and Addenda: Legibly mark up each section to record:
  - 1. Manufacturer, trade name, catalog number, and Supplier of each product and item of equipment actually installed.
  - 2. Changes made by Change Order.
  - 3. Other matters not originally specified.
- F. Shop Drawings: Maintain as record documents; legibly annotate drawings to record changes made after review.

# 2.04 SUBMITTAL OF DOCUMENTS

- A. At completion of project, deliver record documents to Engineer in the following formats:
  - 1. Paper copy as specified above; and
  - 2. On disk in the latest version of AutoCAD, or as approved by Engineer.
- B. Accompany submittal with transmittal letter, in duplicate, containing:
  - 1. Date
  - 2. Project title and number
  - 3. Contractor's name and address
  - 4. Title and number of each record document
  - Certification that each document as submitted is complete and accurate.
  - 6. Signature of Contractor, or his authorized representative.